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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/813,184

03/29/2004

William Radke

500988.02 (30064/US/2)

5824

7590

09/17/2004

Kimton N. Eng, Esq.  
DORSEY & WHITNEY LLP  
Suite 3400  
1420 Fifth Avenue  
Seattle, WA 98101

EXAMINER

CHAUHAN, ULKA J

ART UNIT

PAPER NUMBER

2676

DATE MAILED: 09/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/813,184	RADKE ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Ulka J. Chauhan	2676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2004.  
2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 29 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>3/29/04, 7/12/04</u> .  | 6) <input type="checkbox"/> Other: _____                                    |

### DETAILED ACTION

1. Claims 2-31 are cancelled and claim 1 is pending.

#### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
4. **Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,987,628 to Von Bokern et al and U.S. Patent No. 5,809,228 to Langendorf et al.**
5. As per claim 1, Von Bokern teaches a method for automatically correcting errors detected in a memory subsystem comprising:  
  
reading data and an associated error correction code from a location in the memory array (col. 5 lines 45-47 and Fig. 2: *data values and ECC values output from the memory subsystem 14 are supplied to the ECC logic 39*);

storing the data in a FIFO (col. 5 lines 47-57: *For each data value received from the memory subsystem 14, the ECC logic 39 determines whether the data value is corrupted, attempts to recover the data value, and then forwards the data value to the RMW logic 41 or to various read buffers (not shown) associated with respective requesting agents*);

modifying at least a portion of the data; and when writing the modified data to the memory array, updating the data stored in the FIFO with the modified portion of the data; calculating a new error correction code based on the updated data in the FIFO; and storing the updated data and the new error correction code to the location in the memory array (col. 5 line 61-col. 6 line 4, col. 13 lines 57-65, and col. 14 lines 3-20: *The RMW logic 41 having a RMW buffer 105, buffers the corrected data and writes the data to the memory subsystem 14 at an address provided by the memory correction logic 35 via the ECC generator 97 and ECC logic 39 such that, data read from memory may be merged with data from other write buffers and written back to memory along with its corresponding ECC*).

Von Bokern does not expressly teach that the RMW buffer 105 is a FIFO. However, Langendorf teaches a system for combining multiple writes to a memory utilizing a write buffer in which the write buffer is implemented as a FIFO (col. 8 lines 8-16). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the teachings of Von Bokern and Langendorf whereby the RMW buffer of Von Bokern's invention is implemented as a FIFO so that data is synchronized by being buffered and so that the data stored for the longest time will be retrieved first, thereby reducing its latency

***Conclusion***

6. The following prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 6784889      U.S. Patent Application Publication No. 20010019331

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ulka J. Chauhan whose telephone number is (703) 305-9651.

The examiner can normally be reached on Mon. through Fri., 9:30 a.m. to 4:00 p.m.

8. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on (703) 308-6829. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

9. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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Ulka J. Chauhan  
Primary Examiner  
Art Unit 2676

ujc  
September 15, 2004